

FILE 'REGISTRY' ENTERED AT 14:13:39 ON 13 SEP 2005

=> S SULFOHYDROLASE/CN

L1 1 SULFOHYDROLASE/CN

=> D

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 9068-67-1 REGISTRY

ED Entered STN: 16 Nov 1984

CN Sulfatase (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Sulfohydrolase

MF Unspecified

CI MAN

LC STN Files: ADISNEWS, AGRICOLA, BIOBUSINESS, BIOSIS, BIOTECHNO, CA,  
CAPLUS, CHEMCATS, CSCHEM, EMBASE, MEDLINE, PIRA, PROMT, TOXCENTER,  
USPAT2, USPATFULL

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

620 REFERENCES IN FILE CA (1907 TO DATE)

10 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

621 REFERENCES IN FILE CAPLUS (1907 TO DATE)

FILE 'CAPLUS' ENTERED AT 14:14:14 ON 13 SEP 2005

=> S SULFOHYDROLASE;S SULFATASE;S L1,L2,L3

169 SULFOHYDROLASE

19 SULFOHYDROLASES

L2 179 SULFOHYDROLASE

(SULFOHYDROLASE OR SULFOHYDROLASES)

3778 SULFATASE

804 SULFATASES

L3 4041 SULFATASE

(SULFATASE OR SULFATASES)

621 L1

L4 4161 (L1 OR L2 OR L3)

=> S CHONDRUS

629 CHONDRUS

6 CHONDRI

1 CHONDRIS

L5 636 CHONDRUS

(CHONDRUS OR CHONDRI OR CHONDRIS)

=> S L5 AND L4

L6 6 L5 AND L4

=> D 1-6 CBIB ABS

L6 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

2000:814635 Document No. 133:360461 Sulfogalactan sulfohydrolases

and cDNAs of Chondrus crispus and enzymic modification of

sulfogalactans. Genicot, Sabine; De Ruiter, Gerhard; Kloareg, Bernard;

Penninkhof, Bea; Potin, Phillipe; Richard, Odile; Rudolph, Brian (Hercules

Incorporated, USA). PCT Int. Appl. WO 2000068395 A2 20001116, 110 pp.

DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA,

CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,

HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US12531 20000509.

PRIORITY: US 1999-PV133376 19990510.

- AB Purified sulfohydrolases are disclosed. Sulfohydrolases I and II of *C. crispus* and the corresponding cDNAs are further disclosed. A process for purifying such sulfohydrolases, which includes subjecting an extract from seaweed to fractionation and subjecting at least one of the fractions to Ph Sepharose chromatog. to obtain fractions containing at least one sulfohydrolase is described. A process of enzymically modifying a sulfated compound sulfohydrolase I and/or II is claimed. A method for extracting one of  $\nu$ - and  $\mu$ -carrageenan from seaweed, including dispersing seaweed in a salt solution including  $K_2CO_3$  to form a dispersion; filtering the dispersion to obtain a liquid; ultrafiltering the dispersion to remove salts; concentrating the liquid; adjusting the pH of the liquid to about 8 to 8.5; and precipitating one of  $\nu$ - and  $\mu$ -carrageenan from the liquid is claimed. Thus, the purified *C. crispus* sulfohydrolases were characterized. They converted  $\nu$ - to  $\iota$ -carrageenan.

L6 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

1981:134698 Document No. 94:134698 Neocarratetraose 4-O-monosulphate  $\beta$ -hydrolase from *Pseudomonas carrageenovora*. McLean, Maitland W.; Williamson, Frank B. (Dep. Biochem., Univ. Aberdeen, Aberdeen, UK). European Journal of Biochemistry, 113(3), 447-56 (English) 1981. CODEN: EJBCAI. ISSN: 0014-2956.

- AB Neocarratetraose 4-O-monosulfate  $\beta$ -hydrolase (I) has been enriched 73-fold from the cell-free extract of *P. carrageenovora*. I catalyzes the hydrolysis of the  $\beta$ -glycosidic linkage of neocarratetraose 4-O-monosulfate [3,6-anhydro- $\alpha$ -D-galactopyranosyl-(1 $\rightarrow$ 3)- $\beta$ -D-galactopyranosyl-(1 $\rightarrow$ 4)-3,6-anhydro- $\alpha$ -D-galactopyranosyl-(1 $\rightarrow$ 3)-D-galactose 4-O-sulfate]. The products of hydrolysis are neocarrabiose and neocarrabiose 4-O-sulfate. During purification, the  $\nu$ kappa.-carrageenase and 4-sulfatase activities present in the bacterial extract were resolved from I. By SDS-polyacrylamide gel electrophoresis, I has a mol. weight of 94,000.  $Ca^{2+}$  stimulated the activity with a  $K_m$  of 0.50 mmol dm $^{-3}$ . Optimal activity was found at pH 7.0 and the  $K_m$  determined for the nominal substrate was 68  $\mu$ mol dm $^{-3}$ . [ $^{14}C$ ]neocarratetraose 4-O-monosulfate was prepared from [ $^{14}C$ ]carrageenan (*Chondrus crispus*) and utilized in a radiochem. assay for I. Synthesis of [1- $^3H$ ]neocarratetraitol 4-O-[ $^{35}S$ ]monosulfate yielded another substrate. This alditol was hydrolyzed to yield a single radioactive species, thus supporting the position of sulfation of neocarratetraose 4-O-monosulfate deduced from  $^{13}C$  NMR studies. Neocarratetraose 4-O-disulfate [3,6-anhydro- $\alpha$ -D-galactopyranosyl-(1 $\rightarrow$ 3)-4-O-sulfate- $\beta$ -D-galactopyranosyl-(1 $\rightarrow$ 4)-3,6-anhydro- $\alpha$ -D-galactopyranosyl-(1 $\rightarrow$ 3)-D-galactose 4-O-sulfate] was not hydrolyzed by purified I. Tentative evidence for transglycosylation was obtained with both monosulfated substrates. A pathway is described for the sequential degradation of neocarratetraose 4-O-disulfate to neocarrabiose.

L6 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

1979:402566 Document No. 91:2566 Carrageenan biosynthesis. Craigie, J. S.; Wong, Kwan F. (Atlantic Reg. Lab., Natl. Res. Counc. Canada, Halifax, NS, B3H 3Z1, Can.). Proceedings - International Seaweed Symposium, Volume Date 1977, 9, 369-77 (English) 1979. CODEN: ISSYA4. ISSN: 0074-7874.

- AB Haploid *Chondrus crispus* was used to provide  $\kappa$ - and  $\mu$ -carrageenan fractions and as a source of sulfohydrolase activity. Bacterial degradation of the  $\kappa$ -carrageenan gave a polymeric subfraction which was shown by chemical and IR evidence to be enriched in 4-linked galactose-2,6-disulfate. The fraction thus has features common to  $\nu$ -carrageenan as it is a good substrate for the

sulfohydrolase. The results support the idea that the final step in  $\iota$ -carrageenan formation is catalyzed by the same or a very similar enzyme. If regulation of carrageenan synthesis were exercised at the sulfotransferase step, the 5 common carrageenans could be derived from a common precursor with  $\mu$ -carrageenan occupying a pivotal point in the production of  $\kappa$ -, or  $\nu$ - and  $\iota$ -carrageenans. The  $\lambda$ -polymer is not substrate for the sulfohydrolase present in diploid *Chondrus* and is a metabolic end-product.

L6 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

1978:420317 Document No. 89:20317 Sulfohydrolase activity and carrageenan biosynthesis in *Chondrus crispus* (Rhodophyceae).

Wong, Kwan F.; Craigie, James S. (Atlantic Reg. Lab., Natl. Res. Counc. Canada, Halifax, NS, Can.). Plant Physiology, 61(4), 663-6 (English) 1978. CODEN: PLPHAY. ISSN: 0032-0889.

AB An enzyme catalyzing the conversion of  $\mu$ - to  $\kappa$ -carrageenan was demonstrated in both haploid and diploid plants of *C. crispus*. It acted at the polymer level, producing 3,6-anhydro-D-galactose with the stoichiometric release of sulfate. Two-thirds of the recoverable enzyme was associated with the 15,000 g pellet, most of which could be solubilized by passage through a Ribi Cell Fractionator. The enzyme precipitated between 2.65 and 4.24 M (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> and was partly purified on DEAE-cellulose columns. This sulfohydrolase had a pH optimum near 6.5 and was inhibited by molybdate, phosphate, sulfate, tungstate, cysteine, ATP, GTP, UDP, and by  $\lambda$ -carrageenan. No activator was found. The enzyme showed a similar affinity for several preps. of  $\mu$ -carrageenan and for the  $\kappa$ -carrageenase-resistant fraction from  $\kappa$ -carrageenan, thus confirming that the latter is a biosynthetically unfinished mol. A comparable extract from *Gigartina stellata* gave a higher specific activity for the sulfohydrolase, but was otherwise quite similar to the *Chondrus* enzyme.

L6 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

1961:120156 Document No. 55:120156 Original Reference No. 55:22630b-d

Hydrolysis of polysaccharide sulfate esters by a sulfatase preparation from *Charonia lampas*. Takahashi, N.; Egami, F. (Univ. Nagoya). Biochemical Journal, 80, 384-6 (Unavailable) 1961. CODEN: BIJOAK. ISSN: 0264-6021.

AB The enzymic desulfation of various synthetic and naturally occurring polysaccharide sulfates by a partially purified sulfatase preparation from a marine gastropod *C. lampas* has been studied. The relative rates of hydrolysis of the following substrates were determined: cellulose polysulfate, cellulose sulfate (enzymically desulfated), cellulose sulfate (acid hydrolyzed), charonin sulfate (S-rich fraction), charonin sulfate (S-poor fraction), dextran polysulfate, chondroitin sulfate A, chondroitin sulfate (shark cartilage), heparin, amylose polysulfate, glycogen sulfate, glucan sulfate (Busycon), jelly layer of sea urchin eggs, polysaccharide sulfate of *Chondrus* spp. Cellulose polysulfate and charonin sulfate were rapidly desulfated by the cellulose polysulfatase of the enzyme preparation. Heparin, amylose polysulfate, glycogen sulfate, and polysaccharide sulfates from a seaweed (*Chondrus*), from sea-urchin eggs and from the marine gastropod *Busycon* were hardly affected. Chondroitin sulfate and dextran sulfate were slowly desulfated by hydrolysis of the former can probably be attributed to the presence of chondrosulfatase in the enzyme preparation.

L6 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

1941:27727 Document No. 35:27727 Original Reference No. 35:4399h-i

Carbohydrase acting on the mucilage from *Chondrus ocellatus*

Holmes, II. Relations of this enzyme to inulase, pectinase and gelase.

Mori, Takaziro; Okahuzi, Tokutaro Nippon Nogei Kagaku Kaishi, 16, 886-90 (Unavailable) 1940. CODEN: NNKKA. ISSN: 0002-1407.

AB cf. C. A. 34, 3285.3. Inulase, pectinase and gelase were proved in the internal organs of Turbo cornutus. The mucilage from Chondrus ocellatus Holmes could not be hydrolyzed by inulase and pectinase of Penicillium glaucum. It was hydrolyzed by the extract of Turbo cornutus without sulfatase.

=> E GENICOT S/AU

=> S E3,E4

4 "GENICOT S"/AU

4 "GENICOT SABINE"/AU

L7 8 ("GENICOT S"/AU OR "GENICOT SABINE"/AU)

=> E KLOAREG B/AU

=> S E3,E4

21 "KLOAREG B"/AU

81 "KLOAREG BERNARD"/AU

L8 102 ("KLOAREG B"/AU OR "KLOAREG BERNARD"/AU)

=> E POTIN P/AU

=> S E3-E6

15 "POTIN P"/AU

1 "POTIN PH"/AU

79 "POTIN PHILIPPE"/AU

1 "POTIN PHILLIPE"/AU

L9 96 ("POTIN P"/AU OR "POTIN PH"/AU OR "POTIN PHILIPPE"/AU OR "POTIN PHILLIPE"/AU)

=> E RUDOLPH B/AU

=> S E3,E23

14 "RUDOLPH B"/AU

5 "RUDOLPH BRIAN"/AU

L10 19 ("RUDOLPH B"/AU OR "RUDOLPH BRIAN"/AU)

=> E DE RUITER G/AU

=> S E3,E4,E9,E10

1 "DE RUITER G"/AU

6 "DE RUITER G A"/AU

1 "DE RUITER GERHARD"/AU

19 "DE RUITER GERHARD A"/AU

L11 27 ("DE RUITER G"/AU OR "DE RUITER G A"/AU OR "DE RUITER GERHARD"/AU OR "DE RUITER GERHARD A"/AU)

=> E PENNINKHOF B/AU

=> S E4

L12 3 "PENNINKHOF BEA"/AU

=> E RICHARD O/AU

=> S E3,E9

116 "RICHARD O"/AU

13 "RICHARD ODILE"/AU

L13 129 ("RICHARD O"/AU OR "RICHARD ODILE"/AU)

=> S L7,L8,L9,L10,L11,L12,L13

L14 338 (L7 OR L8 OR L9 OR L10 OR L11 OR L12 OR L13)

=> S L14 AND L4

L15 2 L14 AND L4

=> S L15 NOT L6

L16 1 L15 NOT L6

=> D CBIB ABS

L16 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

1997:116020 Document No. 126:289800 Evidence of sulfohydrolase activity in the red alga *Calliblepharis jubata*. Zinoun, M.; Diouris, M.; Potin, P.; Floc'h, J. Y.; Deslandes, E. (Laboratoire Ecophysiologie Biochimie Algues Marines, Brest, F-29285, Fr.). *Botanica Marina*, 40(1), 49-53 (English) 1997. CODEN: BOTNA7. ISSN: 0006-8055. Publisher: de Gruyter.

AB An enzyme able to catalyze the conversion of carrageenan precursors into iota-carrageenan has been demonstrated in the red alga *Calliblepharis jubata* using a procedure based on 35S-labeled carrageenan. Labeled carrageenan precursors were first obtained by feeding *Calliblepharis jubata* with 35S042- -artificial seawater under optimal conditions for carrageenan synthesis. Then a iota-carrageenase was applied to the 35S-labeled extracted carrageenan. Subsequently the carrageenan fraction resistant to the iota-carrageenase was used as a substrate for the sulfohydrolase reaction. Finally the sulfohydrolase activity was detected by measuring the labeled sulfate released from the 35S carrageenan polymer resistant to the iota-carrageenase. The sulfohydrolase extracted from *Calliblepharis jubata* was precipitated between 2.5 and 4.2 M (NH<sub>4</sub>)<sub>2</sub> SO<sub>4</sub> and partly purified on a Sephadex G-75 column. Protein fractions showing the enzyme activity was routinely used for sulfohydrolase characterization.

	<b>L #</b>	<b>Hits</b>	<b>Search Text</b>
<b>1</b>	L2	1442	SULFATASE
<b>2</b>	L4	2	(L1 OR L2) SAME L3
<b>3</b>	L1	40	SULFOHYDROLASE
<b>4</b>	L3	470	CHONDRUS
<b>5</b>	L5	0	SULFOHYDROLASE
<b>6</b>	L6	8	SULFATASE
<b>7</b>	L7	91	CHONDRUS
<b>8</b>	L8	0	L6 AND L7